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Yayo Umetsubo, "Assessment as a Learning Project: Online Surveys with Immediate Formative Feedback."
Proceedings of the IATUL Conferences. Paper 1.
<https://docs.lib.purdue.edu/iatul/2016/chngroles/1>

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ASSESSMENT AS LEARNING PROJECT: ONLINE SURVEYS WITH IMMEDIATE FORMATIVE FEEDBACK

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Abstract

Purpose

This paper proposes a practical assessment model that focuses on students' performance-related variables, for which information literacy (IL) is designed and delivered. High satisfaction rates about library instruction do not always correlate with user's performance level on evaluating information online and sourcing quality information; the findings from the case study at Cape Breton University (CBU), Nova Scotia, Canada, provides a potential solution to the current challenge in the assessment process.

Design/Methodology/Approach

The author launched a research project called *Assessment as Learning Project: Online Surveys with Immediate Formative Feedback* at CBU by designing and developing two online surveys for students who are taking courses in the School of Arts and Social Sciences. A 30-minute pre-survey (FluidSurveys & Moodle) includes seventeen exercise questions and consists of eighty-eight pieces of feedback in total. Fifteen questions are new, with the exception of two questions adapted from *The Effectiveness of a University's Single-session Information Literacy Instruction* (Hsieh & Holden, 2010). The pre-survey allows students to gauge their ability to assess credibility, accuracy, authority, and/or currency. Students can also learn how to develop their IL skills by reading the feedback that pops up immediately after students choose their answer. The pre-survey was delivered before a major assignment during the Winter semester. A 20-minute post-survey, including seven new exercise questions, was delivered at the end of the semester. The post-survey was designed to remind students of what they learned from the pre-survey.

Many exercise questions include a quotation from a source. The sources vary and include comments on a historical figure, biography that includes historical accounts on non-Western cultures, data that pertains to emotionally disturbing experiences, and news articles that can commonly be shared through social media (e.g., http://yumetsub.site11.com/quiz_sample.html). This paper includes an analysis on the data from the surveys, for example, students' progress on their IL skills.

Findings

The results from the surveys indicate three potential benefits. First, given a reflective learning opportunity, students can recognize the strengths and weaknesses of their information literacy skills and learn how to improve their skills. Second, students can learn what kind of questions they can ask librarians because feedback indicates what kind of questions librarians can answer. Third, instructors/faculty can save the time to repeatedly teach students not to use certain types of sources in their assignments since the surveys explain and bring awareness to this for the students.

Practical implications/Value

If students are overconfident in their abilities to search, find and evaluate information, they risk underestimating the challenge of finding and using quality information online; thus helping them foster critical self-reflection is one way to mitigate the problem. An example is demonstrated by the assessment surveys that include various types of sources and provide guidance of how to consult a person, tool, or platform as a source of information. The assessment was tested in various disciplines in the School of Arts and Social Sciences. The results indicate a number of potentials to use and develop the surveys: for example, they can be incorporated into a curriculum assignment.

Keywords: information literacy, assessment, formative feedback

Introduction

This case study provides the process and results summary of *Assessment as Learning Project: Online Surveys with Immediate Formative Feedback* (*Assessment as Learning Project*), the project that was launched and completed by Yayo Umetsubo, the liaison librarian for the School of Arts and Social Sciences (SASS) at Cape Breton University (CBU), Nova Scotia, Canada. The process to develop a theoretical framework and design the pre- and post-survey, along with the results, yielded a possible solution to the current challenges in the assessment process regarding student information literacy skills. Subsequently, based on the results of how participants responded to the project, future considerations are discussed to enhance the project. This study will be beneficial for librarians who aspire to integrate an online library module into the curriculum and to help students develop basic information literacy skills by taking a democratic approach.

Background Information

CBU, one of Canada's youngest universities, consists of 2,145 full-time undergraduates, 247 graduate students, and 448 part-time undergraduate students (December 2015). The University offers programs in liberal arts, business, and sciences, and professional degree programs, such as Education and Nursing, and three librarians take liaison roles in the programs. At CBU, Umetsubo started her liaison librarian position in August, 2015. She has been responsible for Education and Unama'ki College, in addition to the Humanities and Social Sciences that deliver over 150 courses during a single academic term. She has delivered one-time library instructional sessions in various classes at the beginning of a semester or before a major assignment, which focused on specific areas to find and evaluate relevant resources. To analyze how well students remembered library instruction, she conducted a pilot survey and quizzes in two History classes at the end of December 2015. The results yielded two issues. First, high satisfaction rates about library instruction did not indicate that students could choose correct answers to the quizzes that reflected on the library instruction. Second, students who previously attended other library sessions prior to her session paid less attention to the detail even though each library session was different. Other issues also became noticeable through teaching in classes, helping them at the reference desk, and discussing concerns with SASS faculty. CBU undergraduate students seem to underestimate the possibility to develop their skills to find quality information online as long as their grades meet their needs and/or expectations. Students have not noticed that their proposal, argument, or discussion can become more powerful and effective depending on what sort of information they select. Additionally, many students seem not to know what kind of knowledge librarians have, other than their knowledge about books in the library [Miller & Murillo, 2012].

In order to overcome these issues, the *Assessment as Learning Project* aimed to provide an online assessment module that enables students who were enrolled in SASS courses to develop their basic information literacy skills. In addition, the feedback in the pre-survey was designed to encourage students to know what kind of questions they can ask librarians and to save faculty's time by repeatedly informing students about the certain types of information they should not use in their assignments.

Theoretical Framework

The theoretical framework of this project was developed by Earl's *Assessment as Learning: Using Classroom Assessment to Maximize Student Learning* (2003). Her book differentiates three approaches, "Assessment of Learning" (summative assessment by teachers), "Assessment for Learning" (assessment by and its results for teachers to identify specific learning needs of students), and "Assessment as Learning" (self-assessment through which students ask themselves reflective questions to enhance their learning and acting) [pp. 21-28]. As you can see from the

research title *Assessment as Learning Project*, the project aims to achieve “Assessment as Learning” in conjunction with “Assessment for Learning”.

“Assessment for Learning” provides librarians with information about the level of student achievement and library instruction effectiveness. This type of assessment makes their impressions from their daily experience with students at the reference desk and in classes more measurable data. “Assessment for Learning” is vital; however, without testing to what extent students have learned and giving immediate feedback to their answers, in addition to the limitation of offering a one-time library instruction, the benefit of assessment and evaluation focuses on librarians whose purposes include enhancing their next instruction. On the other hand, “Assessment as Learning” allows students to play a key role to connect formative assessment and the learning process and become “their own best assessors” [Earl, 2003, p. 25]. It seems indispensable to offer a self-reflective opportunity to the students who were assessed through completing the assessment particularly when a one-time library or zero instruction is a current option to the librarian, which does not easily allow him/her to keep track of on student progress, and when one liaison librarian is responsible for a number of subject areas, which does not enable him/her to reach out to the students in his/her areas.

Accordingly, the ultimate goal of this project was to create effective questions and feedback that encourage students to recognize their limited information literacy and develop their skills. The author defines “effective questions and feedback” as scenario-based questions in which students can relate themselves to a hypothetical situation. Informative, conversational, and friendly feedback comes without academic and technical vocabularies. Earl (2003) notes that student self-motivation levels are also the key for “Assessment as Learning”. To design an assessment that can motivate students to engage it, Nicol (2010) provides a historical and theoretical analysis of written feedback. He discusses that dialogical feedback can prompt “inner dialogue in students’ minds” because they can find meaning from the inner dialogue through feedback and consciously take it for their future actions [p. 504]. *Assessment as Learning Project* was designed to incorporate his analysis in order to communicate with and inspire students through *Assessment as Learning Project*.

The Process of Designing Twenty-three Questions and Formative Feedback

The process of designing, creating, and developing twenty-three questions and eighty-eight pieces of formative feedback involved three components. The designing process involved analyzing information literacy programs that have been implemented, for example, by Hsieh and Holden (2010), Ford and Hibberd (2010), and Dunaway and Orblych (2010). At the same time, the Association of College and Research Libraries *Framework for Information Literacy for Higher Education (ACRL Framework)* that the ACRL Board issued in February, 2015, gave the researcher guidance to create and develop seventeen questions and feedback in the pre-survey, and six questions and hints in the post-survey. Many of scenario-based questions underline the concepts of the *ACRL Framework*. These two components were followed by several consultations with the Manager at the Centre for Teaching and Learning, SASS department chairs, and two SASS faculty members who agreed to offer their class time to compel their students to take the surveys.

Comparison between assessment quizzes and activities from existing literature was initially a part of the literature review process; however, it made the researcher notice how language in each question could excite one’s curiosity to answer. For example, regarding quality, peer-reviewed, or scholarly material, Dunaway and Orblych (2010) ask “What group of characteristics of a source make that source high quality?” along with the following four choices [pp. 31-12]:

1. Bias, popular, known to a few, unverifiable,
2. From a known and trusted publication, popular, academic,
3. Peer-reviewed, expert analysis, researched, current
4. Dated, scholarly, incredible, from a known and trusted publication

These adjectives can often be used in a library session whereas, in a general online survey, the multiple-choices seem crammed and the question does not sound straightforward. According to one of the comments from faculty, “bias” would not be a common word for first-year students unless the question gives them an example that shows a bias view. Hsieh and Holden (2010), on the other hand, ask “Which of the following statements is TRUE about scholarly journals?” along with four

potential answers, which are more imaginative and explanatory [pp. 470-471]. Therefore, *Assessment as Learning Project* appropriated the question and answers by Hsieh and Holden although the researcher changed “layman” to “the general public”. By adding feedback and a heading to emphasize the type of ability that is necessary to answer the question, the final question became as follows:

Figure 1.

Q14: [Ability to distinguish peer-reviewed articles from other types of articles]	
Which of the following statements is TRUE about peer-reviewed journal articles?	
Multiple-choice (one answer)	Answer & Formative Feedback
Peer-reviewed journal articles contain colorful, glossy pages and typically accept commercial advertising.	FALSE Peer-reviewed articles aim not to appeal to the audience's emotions and feelings to keep them rational. Images, videos, stories, and music are not employed to support the author's argument unless they are used as a primary source.
They are mainly for the general public and non-professionals to read.	FALSE Peer-reviewed articles were written by scholars and researchers. University students are encouraged to utilize them to develop a high level of critical thinking, analytical, and writing skills.
They have plain pages, minimal graphics, and detailed references.	TRUE Peer-reviewed articles provide a rational argument and method to mitigate or solve a problem that a researcher identified. Emotional effects that are often created by images, videos, stories, and music are not necessary for a fair argument.
They contain glossy photos but not charts or tables.	FALSE In peer-reviewed articles, charts and tables are used to visualize data and statistics. Glossy photos would be considered as a disturbance to a fair argument.

The feedback above was designed to explain peer-reviewed journal articles from their purposes, visual aspects and the targeted audience particularly for students who are not familiar with the concept of “peer-reviewed”.

Concerning citation, the experience with students at the reference desk and in classes at CBU has indicated that they do not create Bibliography, Work-cited or References from scratch. Some instructors, particularly those who teach students from various disciplines that use different major citation styles, also seem to not be able to correct all the details of the references that students make. For different reasons, many students are unable to cite properly by themselves and identify types of information by reading citation. To test their knowledge of citation, for example, Whitlock and Nanavati (2012) ask “Analyze a computer-generated citation to see that it contains all of the required components and follows the formatting guidelines of a particular citation style” [p. 37]. The phrase “computer-generated citation” may not sound clear to CBU students who simply copy and paste citation from the library's federated search system, Google Scholar, or databases. Therefore, in *Assessment as Learning Project*, students are asked:

Figure 2.

Q15: [Ability to know the basic information that is required to cite a source]
Citation plays an important role to tell the reader what type of source you used and how to find it. What is the basic information that do you do NOT need to include when you cite a journal article (e.g., MLA, Chicago Manual of Style, Turabian, APA, etc.) on a reference list? Check all that apply:

Multiple-choice	Formative Feedback
Author(s)	Incorrect Giving credit to the original author/researcher is very important. Don't forget it!
Editor(s)	Correct BUT if you are citing a book that was edited by a scholar(s), include the name of the editor(s).
Publication Year	Incorrect If you don't know when the data or remark was made, it is difficult to analyze it. It is crucial to include the publication year.
Publication title (the title of the book, article, document, etc.)	Incorrect If you don't include the publication title, which is often unique, how can we find the information?
Journal Title	Incorrect When you cite an article in a journal, you need to cite both the article title and journal title. If you cannot distinguish article from journal, ask a librarian!
Copyright date	Correct You don't need to include copyright date in a formal citation. However, the Library's catalogue often includes the copyright date.
Author's affiliation (e.g., university)	Correct When you use the Library's databases and/or when you download a peer-reviewed article, you can often find the author's affiliation. But this information is not necessary to include when you cite.

In addition to "Correct" and "Incorrect", other phrases are also used: for example, "Not the best answer." "This is not a recommended answer. Be critical." "Good idea." "A good start." and "Are you sure?"

Regarding situational questions in a subject-specific area, for example, Ford and Hibberd (2010) ask "You have been asked to find articles on oral health problems associated with Australian Aboriginal children, but are having difficulty finding enough information. Which of the following articles might also be useful?" [p. e45]. Even though the way of asking this question sounds friendly, because *Assessment as Learning Project* does not focus on students in a specific subject area, discipline-specific questions may make students in other disciplines uninterested. However, this question reminded the researcher that students would perform differently depending on familiarity with the topic. Using a situation that students have a similar experience with allows them to visualize a connection to the situational setting. On the other hand, using a situation that students are unfamiliar with, for instance, including things outside of their cultural norms is also important. The author turned to the *ACRL Framework* (2015) which provided guidance to create new questions and feedback.

The *ACRL Framework* presents six frames that contextualize activities that are involved about information to develop information literacy skills. For example, one of the frames "Authority is Constructed and Contextual" stresses the needs of defining "different types of authority, such as subject expertise (e.g., scholarship), societal position (e.g., public office or title), or special experience (e.g., participating in a historic event)" [p. 4]. *Assessment as Learning Project* includes four definition-related questions in the pre-survey because students who have not completed research assignments often do not know the importance of defining a word and/or term. Two out of four questions focus on how to find more credible sources when students are asked to use a word in their papers. The multiple-choice answers encourage students to read and observe URLs and also let them know that they would need to define certain words if they have specific meanings in certain disciplines. The message of these questions is not whether students should not use Wikipedia over Library encyclopedias; instead, how to acknowledge authorities by looking for accuracy, credibility, and reliability, concerning intellectual property in relation to citation.

“Authority is Constructed and Contextual” also stresses the value of “the validity of the information created by different authorities [...] regarding world views, gender, sexual orientation, and cultural orientations” [p. 4]. To verify information about other countries is particularly challenging unless one knows their languages. Question Seven includes sexual orientation and cultural orientations using a biography, which students need to know how to use it differently from a scholarly book:

Figure 3.

Q7: [Ability to assess credibility, authority, accuracy, & purpose of information in other cultures]

Dr. Yoshino is the Professor of Constitutional Law at New York University School of Law. The citation (APA Style) and other information about the book is as follows:

Yoshino, K. (2006). *Covering: The hidden assault on our civil rights*. New York, NY: Random House.

The Subjects are: Gay lawyers -- History -- 21st century -- Biography -- United States.

Japanese American lawyers -- History -- 21st century -- Biography -- United States.

The following texts came from his book *Covering: The Hidden Assault on Our Civil Rights* (2006):

1) This tradition of male-male- sexuality withered when Japan's self-imposed isolation from the world ended in 1868. Saddled with the infamous “unequal treaties” that subordinated it to Western nations, Japan realized it would have to modernize to be treated as a peer. Modernization included the adoption of the Meiji Constitution, the embrace of industrialization, and the repudiation of “barbaric” cultural practices such as homosexuality. (p. 86)

2) Many of these students were half Caucasian, what the Japanese call *konketsuji*, or “children of confused blood (p. 114).

How would you evaluate the two quotes?

Choose the one answer that you think is the most appropriate.

Students need to know that a biography focuses on a limited or personal view, which makes a biography more personal and inspiring. Although it suits for the purpose of a primary source, notes and bibliography about historical facts are not often available. However, the question is not just about a biography. It includes subjects or controlled vocabularies of the book. The researcher also wanted to raise awareness of subjects that tell us about a book since she did not expect all the survey participants would know about the role of controlled vocabularies.

The multiple-choices are listed below while long accompanied extensive feedback is omitted in this paper:

Figure 4.

Multiple-choice (one answer)	Answer
I trust everything that he says because he is a law professor in a famous university.	Be critical.
I can trust the first quote for the history of homosexuality in Japan. I also use the second quote to discuss how Japanese language (<i>konketsuji</i>) has a biased view on children who have mixed ancestry.	Be critical.
I will do some detective work on the first quote to know more about the history of homosexuality in Japan. But I believe his translation of <i>konketsuji</i> because he is Japanese.	Only partially correct.
This is a biography, not a peer-reviewed scholarly publication. While this gives me a good start, I will use other historical sources and dictionaries for my paper.	Correct!

Regarding the definition of a word, the same word can have additional meanings and spellings in different countries due to the differences of alphabets, languages, education systems, cultures, and social expectations, while this type of language development would not often be discussed in library

sessions. Yet, although the practices of defining a term and analyzing a specific population outside of our own society are common practice in Humanities and Social Sciences studies, it is indispensable to guide students to familiarize themselves with “Authority is Constructed and Contextual” by providing examples. Even experts could make a mistake when they analyze information outside of their specialties. For example, the Japanese meaning of *konketsuji* that Yoshino provides is not accurate. *Konketsuji* consists of two words: *kon* (mixed, be full), *ketsu* (blood), and *ji* (child or children). *Kon* simply means mix or mixed, not confused [Daijirin, 2006]. The mistake could have been made because he was born in Los Angeles and was usually the only Asian student in his classes while his parents were born in Japan (2006). The important points in Yoshino’s biography regarding *konketsuji* include how he developed the meaning and perception of the word while living outside of Japan and how the environment affected the way of his thinking about the word, not the authorized definition of the actual word.

Individuals tend to critically analyze information from diverse angles, cultural perspectives, and worldviews when the topic generates from their own country. However, when information and remarks are about other countries, philosophies, cultures, and languages, individuals are inclined to trust the information and remarks, which come from their friends, news, and/or videos even though they are taken out of context. Similarly, information that appeals to emotion can weaken our logical and rational judgment. For example, shocking photos in the media could weaken our analysis of data that is shown along with the photos because anger, worry, and sadness could occupy our mind. Reflecting on the importance of ethical usage of information that the *ACRL Framework* stresses, Question Nine in the pre-survey asks students how to verify data posted online by an organization that they are not familiar with. Students are encouraged to check their ability to assess credibility, accuracy, authority, and relevance of data that pertains to emotionally disturbing experiences.

Feedback often prompts students to do some detective work, instead of simply trusting information that they easily find. Knowing this, students may not have found it necessary to develop their search strategies for this detective work. Some would have forgotten to use quotation marks and asterisks to show truncation in a search string even though they were taught to do so in library instruction classes. Accordingly, Question Seventeen aims to remind students of these strategies and encourage them to compare between different search terms, along with the different results. The question below is associated with one of the SASS assignment regarding the current issue in Cape Breton regarding the debate of the erection of the Mother Canada Statue.

Figure 5.

Q17: [Ability to create search terms]

Imagine you are searching a library database for books or articles about how a memorial is used to build a collective memory and cultural identity. Choose the **best** search term strategy from the examples below:

Want to try with a database? Use **Academic Search Complete*** (*the link was embedded in the actual survey for student use).

Multiple-choice (one answer)	Formative Feedback
how a memorial is used to build a collective memory and cultural identity	Ineffective You need to come up key concepts to use scholarly databases that the Library provides. Don't include a sentence in a search box. Omit articles (a/the), prepositions (with/in), and interrogative adverbs (how/where).
memorial collective memory cultural identity	Ineffective Academic databases may not distinguish a specific term/phrase from a word. Use quotation marks (") to let the database regard "collective memory" and "cultural identity" as terms.

memorial "collective memory" "cultural identity"	Need to be improved. Unlike Google and Google Scholar, academic databases look for exact words. These keywords won't be able to retrieve articles that have memorials, collective memories, and cultural identities.
(memorial or memorials) and ("collective memory" or "collective memories") and ("cultural identity" or "cultural identities")	Need to be improved. When you use Boolean operators (AND, OR, NOT), capitalize them.
(memorial OR memorials) AND ("collective memory" OR "collective memories") AND ("cultural identity" OR "cultural identities")	This is not bad, but don't you think this is too long? Why don't you use an asterisk(*) instead of making a long list? memorial* can retrieve memorial, memorials, memorialize (American spelling), memorialise (British spelling), etc.
memorial* "collective memor*" "cultural identit**"	Almost! Using both asterisks and quotation marks is great! Keep in mind that some authors may use not memorial(s), but statue(s). Unlike Google and Google Scholar that search even thesaurus terms for you, academic/scholarly databases do not provide thesaurus terms for you. So, you need to use thesaurus terms for memorial. Also, I would recommend including not "cultural identit**" but "identit**". If you don't know how to create a good search term, ask a librarian for help.
(memorial* OR monument* OR statue* OR shrine* OR Mausoleum*) AND "collective memor*" "identit**"	Great! You will get the most out of the results.

The process of designing this question, as well as the message behind the question and feedback, was also based on the *ACRL Framework*: "[s]earching for information is often nonlinear and iterative, requiring the evaluation of a range of information sources and the mental flexibility to pursue alternate avenues as new understanding develops." ["Searching as Strategic Exploration", p. 9]. By providing the EBSCO Academic Search Complete link, the survey encouraged students to try all of the listed search terms because the only correct one will return proper results. Similarly, at the beginning of the survey, the message is shown that students can use any online resources to complete all the questionnaires, but not talking to their classmates. This is because *Assessment as Learning Project* aims to give students a reflective learning opportunity. Nonetheless, each question, which underlines different sections in the *ACRL Framework*, can be difficult to change students' ways of searching, finding, and evaluating information. To avoid overwhelming students who may not be able to choose correct answers, some pieces of feedback also encourage students to ask a librarian for help (See Figures 2 and 5).

The post-survey includes seven questions as it aims to remind students of what they learned from the pre-survey. Just like the pre-survey, each question in the post-survey relates to the *ACRL Framework*. The post-survey asked students to go to several websites, including an online magazine article and EBSCO Academic Search Complete, skim and evaluate the front-page of the webpage by checking basic information, such as the author, the publication year, and references. Each question includes informative hints to answer, instead of feedback.

Technologies

Regarding technologies, FluidSurveys and Moodle were selected for the pre-survey and FluidSurveys was used for the post-survey. FluidSurveys was suitable for "Assessment for Learning" whereas Moodle partially met the needs of "Assessment as Learning". FluidSurveys does not offer the function to provide immediate feedback while it does capture students' initial knowledge level of each question. Moodle, the free course management system, instead, does offer the function to provide immediate feedback and allows students to try to answer each question as

many times as possible. However, it does not offer the function to capture their first choices that allow the researcher to gauge the range of each student's learning process. Moodle only captures their last choice of answers. In addition, for multiple-choice questions (more than one answer), Moodle cannot prevent students from selecting everything at once. This means that students may barely learn from feedback if they simply want to finish the survey. Overall, using two different platforms for the pre-survey was not ideal for students because they had to read the same questions twice. Identifying the best platform is one of the most important next steps that the researcher wants to take in order to advance the project for the next academic year.

All the results were analyzed by using SPSS and Excel, in addition to a manual analysis of non-numerical data without using software.

Results Summary

Convenience samples for the pre-survey were collected from February to the beginning of March 2016. In the SASS meeting and via email, the researcher/librarian asked faculty to promote the surveys to their students. The majority of 111 students who participated in the pre-survey (FluidSurveys without immediate formative feedback) came from twelve courses in Anthropology/Sociology, Communication, Community Studies, and Political Sciences, or Philosophy (Medical Ethics and Business Ethics courses). In addition, an instructor of Mi'kmaw Studies used the pre-survey (FluidSurveys) as part of his classroom discussion and the results reflect on a collective decision. Except for the data from this Mi'kmaw class, the participants consist of 35 students in the first year (28%), 34 in the second year (28%), 32 in the third year (26%), and 22 students who are studying for more than four years (18%). From the various demographic categories, such as the degree program, major(s), and the number of library instruction classes that students have attended, the survey received a mixture of population.

A faculty member in Anthropology advised that students would not take the surveys unless they "have to" do so. Accordingly, students in two courses in the second-year level of Anthropology and the first-year level of Political Sciences completed the survey in the presence of the instructor and librarian in their class time. In an online course in Community Studies (first-year level), students took the survey at the beginning of their class time. In these classes, it became obvious that some students did not read instruction to move from FluidSurveys to Moodle. This explains why only 104 students out of the 111 students completed Moodle with immediate formative feedback.

Despite the complex situation in which students were asked to use both FluidSurveys and Moodle for the pre-survey, the Moodle results indicate that the scores increased after students read feedback. For example, regarding Question Seven about the history of homosexuality in Japan and the Japanese definition of *konketsuji* in a biography, 58% of students chose the correct answer in FluidSurveys. 95% of students checked the immediate feedback to find the correct answer in the Moodle survey. In terms of Question Fourteen about "peer-reviewed" journal articles, 62% percent of students chose the correct answer in FluidSurveys. 97% of students checked the immediate feedback to find the correct answer in the Moodle survey.

At the beginning of April convenience samples for the post-survey with seven questions were collected. Because students were preoccupied with final assignments and exams at the end of the semester, only twenty-one students took the post-survey. In the aforementioned Anthropology and Community Studies courses, students had to complete the post-survey in their class time although not all of the students came to the class. In total, 15 students completed both the pre- and post-surveys and 5 new students took only the post-survey.

Comparison between the pre- and post-surveys indicates that many of the participants still do not know how to distinguish peer-reviewed articles from other materials by checking the basic information from the front webpage of each article and cannot identify each type of information by reading citation. Two participants who completed both the pre- and post- surveys said that they did not find the pre-survey very useful "because I have already known how to evaluate a variety of sources". However, they did not choose correct answers for more than half of simple questions about peer-reviewed and citation. Other participants who found the pre-survey very useful or somewhat useful also had difficulties in choosing the correct answers for questions about peer-reviewed and citation. Moreover, the post-survey indicates that some upper year students do not have basic information literacy, for example ability to find publication dates and the number of

results returned by search engines or databases. These issues could result from the needs and expectations of undergraduate students in relation to their understanding of the current online environment: undergraduate students were able to find not only primary (multimedia) sources to complete courses in the Humanities and Social Sciences, but also secondary sources, such as peer-reviewed journals, with and without library subscription.

In sum, the survey results illustrate that issues related to students' information literacy are more evidential than perceptible from interaction with students even though the data does not generalize students in SASS courses as a whole because of the nature of the convenience samples. Since only 15 students completed all the pre- and post-surveys though they provided qualitative information, it is not quantitative to measure a long-term effect and impact of questions with immediate formative feedback. However, the data from the pre-survey itself is essential to develop this project for the next academic year.

Conclusion

The quantitative and qualitative information that generated from the *Assessment as Learning Project* suggests the importance of developing a series of surveys and implementing them as an overarching program for undergraduate students to help them continuously develop their information literacy. In conclusion, some faculty members are enthusiastic about helping the author develop the program. It is clear that the program can grow further through consultations and discussions with faculty who understand the importance of information literacy in academics, as well as life-long skills.

In addition, Moodle, which does not accommodate all the needs for researchers, can be a useful free tool to share the questions and feedback beyond one institution; this is because it has Question bank, which is a feature that allows instructors to export and import the questions for their purposes. Accordingly, it is possible to build questions together by collaborating with librarians from various universities.

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